



Distribution of oral and maxillofacial lesions in pediatric patients from a Brazilian southeastern population



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ABSTRACT

Objectives: Oral lesions affecting infants account for approximately 10% of all samples from diagnostic services and studies investigating the distribution of these lesions in pediatrics from different geographic areas are desired to improve the diagnostic knowledge of clinicians. Therefore, the aim of this study is to describe the distribution of oral lesions in a southeastern Brazilian population.

Methods: The oral pathology files of the University of Campinas was retrospectively reviewed for all cases diagnosed from 2000 to 2014 affecting patients 16-years-old and younger. Data on gender and diagnosis were retrieved from patients' oral pathology reports and included in a Microsoft Excel® database.

Results: Out of 34,138 cases, 2539 affected pediatric patients (7.4%) with a higher incidence in those with 13–16 years-old. Salivary gland disease was the most common group of lesions (37.1%), followed by mucosal pathology (13.6%) and odontogenic cysts (11.3%). Mucous extravasation cyst was the most common lesion (36.3%), followed by fibrous hyperplasia (5.6%) and dental follicle (5.2%). Dental lesions were uncommon (7.9%) and malignancies rare (0.4%).

Conclusions: Our results were similar to previous studies and the small differences observed were more likely result of methodological variability and characteristics of the service of origin from where samples were collected.

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1. Introduction

Oral lesions affecting pediatric patients represent approximately 10% of the total amount of lesions diagnosed in specialized diagnostic centers [1], and because parents frequently look for medical assistance even before oral medicine specialists, not only dentists but also otolaryngologists, pediatricians, head and neck surgeons, dermatologists and other medical specialists must be aware of the epidemiological distribution of these lesions. However, the number of studies investigating oral lesions in this population is small and most of them aimed to determine the

distribution of specific group of lesions like odontogenic tumors, salivary gland diseases, jaw cysts and others [2–4]. Moreover, the lack of uniformity in the design of the studies that investigate patients with different age ranges, through widely different period of time and distribute lesions in distinct classification categories, impairs an appropriate understanding of the incidence of lesions in different geographic locations, since results cannot be adequately compared [5,6].

In Brazil very few series describing the incidence of oral lesions in pediatric patients were published to date [7–12] and because of its large geographic extension and socio-demographic heterogeneity, differences in the epidemiology of these lesions throughout the national territory could be found, demanding more studies to be carried out. Therefore, in this survey we investigated the distribution of oral lesions affecting pediatric patients retrieved from a single reference center on oral pathology located in the southeastern region of Brazil with the purpose of determining if there is any difference in the incidence of these lesions when compared with other regions of the globe.

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2. Material and methods

A retrospective analysis of the oral pathology files of the Piracicaba Dental School – University of Campinas (Piracicaba/Brazil) over a 15-year period from January 2000 to December 2014 was conducted and all cases diagnosed in patients 16 years-old or younger were retrieved and tabulated in a Microsoft Excel® file for epidemiologic description.

In addition to age, data on gender and final diagnosis were retrieved from patients' oral histopathology reports. The frequency of each disease, male to female ratio, mean age (and standard deviation), age range and the percentage of each lesion were calculated and provided.

In an attempt to better compare our results with those previously described in literature, all lesions were grouped in one of 12 categories according to criteria proposed by Jones et al. [13] and posteriorly used by Ha et al. [14] because they represent comprehensive categorization of oral and maxillofacial lesions in pediatrics.

3. Results

In the 15-year period investigated, 34,138 lesions were diagnosed, from which 2539 affected patients 16 years-old or younger, representing 7.4% of all specimens received in the Department. A slight female predominance was found (1416 vs 1123 cases, respectively) with a male:female ratio of 0.79. It was observed that patients 13–16 years old were the most affected (39.6%) patients (Fig. 1).

As summarized in Table 1, salivary gland diseases was the most frequent subgroup of lesions, followed by mucosal pathology and odontogenic cysts. Mucous extravasation cyst represented by far the most common entity in both the salivary gland diseases (97.8%) group and in the whole specimens retrieved (36.3%) (Table 2 and S1).

Fibrous hyperplasia was the most common lesion in the mucosal pathology group (41.6% of the group and 5.6% of all specimens) (Table S2), dentigerous cyst was the most frequent diagnosis in the odontogenic cysts group (44.6% of the group and 5.0% of all specimens) (Table S3), gingival hyperplasia predominated in the gingival and periodontal pathologies group (41.4% of the group and 4.5% of all specimens) (Table S4), dental follicle was the most common entity in the dental pathology group (64.5% of the group and 5.2% of all specimens) (Table S5) and cases classified as nondiagnostic because the appropriate clinic and microscopic correlation could

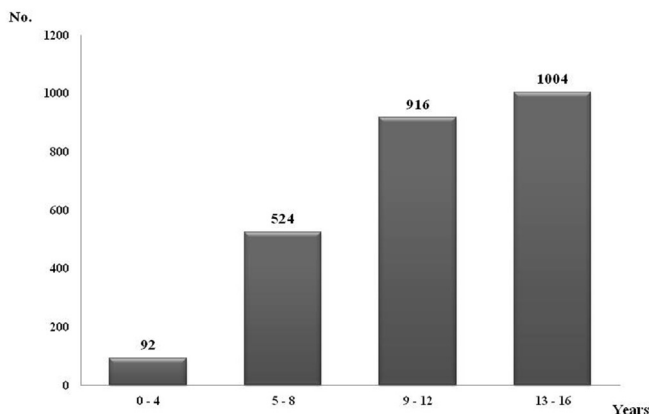


Fig. 1. Distribution of oral lesions in the pediatric population studied according to the age of the patients.

Table 1

Oral pathology distribution according to their classifications in pediatric patients in Brazil (2000–2014), Australia (1945–2003) and UK (1973–2002).

	Present study (2016)		Ha et al. [14]		Jones et al. [13]	
	Total	%	Total	%	Total	%
Salivary gland disease	943	37.1	80	6.3	840	19.6
Mucosal pathology	344	13.6	222	17.3	533	12.5
Odontogenic cysts	287	11.3	219	17.1	519	12.2
Gingival and periodontal pathology	273	10.8	137	10.7	439	10.3
Dental pathology	203	7.9	318	24.8	973	22.7
Miscellaneous pathology	166	6.5	84	6.6	335	7.9
Odontogenic tumors	137	5.4	128	10.0	243	5.7
Bone pathology	73	2.9	47	3.7	143	3.4
Connective tissue pathology	56	2.2	23	1.8	146	3.4
Non-odontogenic cysts	48	1.9	13	1.0	67	1.6
Malignant tumors	9	0.4	9	0.7	31	0.7
Total	2539	100.0	1280	100.0	4269	100.0

The italic values are the percentage values as indicated by the symbol % in italic.

Table 2

Most frequent oral lesions affecting pediatric patients in this study.

Diagnoses	Total	%
Mucous extravasation cyst	922	36.3
Fibrous hyperplasia	143	5.6
Dental follicle	131	5.2
Dentigerous cyst	128	5.0
Nondiagnostic	115	4.5
Gingival hyperplasia	113	4.4
Squamous papiloma	90	3.5
Radicular cyst	85	3.4
Odontoma	80	3.2
Pyogenic granuloma	44	1.7
Peripheral ossifying fibroma	38	1.5
Hereditary gingival fibromatosis	38	1.5
Central giant cell lesion	36	1.4
Keratocyst	34	1.3
Odontogenic cyst (not specified)	32	1.2
Focal epithelial hyperplasia	32	1.2

The italic values are the percentage values as indicated by the symbol % in italic.

not be done represented the most frequent diagnosis in the miscellaneous group (69.3% of the group and 4.5% of all specimens) (Table S6).

Odontoma was the most common odontogenic tumor/hamartoma (58.4% of the group and 3.2% of all specimens) (Table S7), central giant cell lesion was the most common condition in bone pathology (49.3% of the group and 1.4% of all specimens) (Table S8), lymphangioma predominated in the connective tissue pathology group (25% of the group and 0.6% of all specimens) (Table S9), simple bone cyst was the most frequent in the non-odontogenic cyst group (56.3% of the group and 1.1% of all specimens) (Table S10) and Langerhans cell histiocytosis and lymphomas represented the most common malignancies (33.3% of the group each and 0.1% of all specimens each) (Table S11).

4. Discussion

Oral lesions affecting pediatric patients are relatively uncommon in specialized diagnostic centers ranging from 6.6% [8] to over 20.6% [6] of all histopathological specimens, also demonstrating a wide variability of entities recognized. Because of the large discrepancies in the methodologies used in the literature that include different periods of time, age ranges and diseases categorization, what avoid the appropriate analysis of data, we opted for following the guidelines used by Jones et al. [13] and Ha et al. [14] who

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